

## CLAIMS

We claim:

- A peptide that selectively homes to brain.
- The peptide of claim 1, said peptide having 2. the amino acid sequence: 5

X<sub>1</sub>SRLX<sub>2</sub> (SEQ ID NO: 45),

wherein  $X_1$  and  $X_2$  each is about 10 to about 10 independently selected amino acids.

- The peptide of claim 2, said peptide having the amino acid sequence CLSSRLDAC (SEØ ID NO: 3). 10
  - The peptide of claim 2, said peptide having an amino acid sequence selected from the group consisting of CNSRLHLRC (SEQ ID NO: 1) and CNSRLQLRC (SEQ ID NO: 5).
- The peptide of clafm 1, said peptide having 15 the amino acid sequence:

 $X_3VLRX_4$  (SEQ ID/NO: 46),

wherein X<sub>3</sub> is absent or is about 1 to 10 independently selected amin $\phi$  acids and  $X_4$  is about 1 to about 20 independently selected amino acids.

20 The peptide of claim 5, said peptide having an amino acid sequence selected from the group consisting of CVLRGGRC (SEQ ID NO: /4) and WRCVLREGPAGGCAWFNRHRL (SEQ ID NO: 16).

- 7. The peptide of claim 1, said peptide having an amino acid sequence selected from the group consisting of CENWWGDVC (SEQ ID NO: 2) and CGVRLGC (SEQ ID NO: 6).
- 8. The peptide of claim 1, said peptide having 5 an amino acid sequence selected from the group consisting of CKDWGRIC (SEQ ID NO: 7); CLDWGRIC (SEQ ID NO: 8); and CTRITESC (SEQ ID NO: 9).
  - 9. A peptide that selective y homes to kidney.
- 10. The peptide of claim 9, said peptide

  10 having an amino acid sequence selected from the group consisting of CLPVASC (SEQ ID NO: 21); CGAREMC (SEQ ID NO: 22); and CKGRSSAC (SEQ ID NO: 23).
- 11. The peptide of claim 9, said peptide having an amino acid sequence selected from the group consisting of CWARAQGC (SEQ ID NO: 24); CLGRSSVC (SEQ ID NO: 25); and CTSPGGSC (SEQ ID NO: 26).
  - 12. A molecule that homes to a selected organ, wherein said molecule is identified by *in vivo* panning, comprising the steps of:
  - a. administering to a subject a library of diverse molecules;
    - b. collecting a sample of the selected organ; and
    - c. identifying a molecule that homes to said selected organ.

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